

LOCATOR TOOL ASSEMBLY FOR PAINT REPLACEMENT FILMSTechnical Field

5 The present invention relates to paint replacement films and tapes, in particular, to tools and methods used to apply such films or tapes to a desired adherend, and more particularly, to such tools and methods that are used in the application of paint replacement films or tapes to portions of a vehicle (e.g., an automobile, aircraft, watercraft, etc.).

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Background Art

Adhesive backed (e.g., pressure sensitive adhesive backed) paint replacement films or tapes have been used to color portions of a vehicle such as, for example, body portions of an automobile. One such tape is colored black and has been used to color various 15 portions of an automobile door such as, for example, the window sash and/or pillars of an automobile door.

Various tools have been devised for assisting in the application of such tapes to automobile doors. For example, there are tools that locate tape at a desired position on an automobile door before the tape is actually adhered to the door. An example of such a 20 tape locator tool can be found in Japanese Kokai Patent Publication No. JP2003063729, entitled ADHESIVE TAPE AFFIXING AUXILIARY JIG, AND ADHESIVE TAPE AFFIXING METHOD UTILIZING THE JIG, assigned to the assignee of the present application, by the inventor TAKAYOSHI FUJINO, having Application No. 2001259972, and filed on August 29, 2001, and published on March 5, 2003. Such tools have included 25 structure for securing the tool to the door and for holding the tape adjacent to the location on the door that the tape is to be adhered. In this way, the tape can be more accurately and consistently applied to the desired portion of the automobile door. The paint replacement tapes used with such tape locator tools include a release liner for protecting the pressure sensitive adhesive (i.e., PSA) until the tape is applied. Examples of such paint 30 replacement tapes can be found in U.S. Patent No. 6,748,993, the disclosure of which is incorporated herein by reference.

The present invention provides an improvement in such locator tool technology.

Disclosure of Invention

A locator tool assembly is provided having a locator tool capable of being mounted to an edge of an outer surface of a vehicle door. In one embodiment, the tool is mountable to an outer edge of the vehicle door outer surface. In another embodiment, the tool is 5 mountable to an inner edge of the vehicle door outer surface. The tool functions to properly position an adhesive-backed film structure relative to the vehicle door so that at least a segment of the film structure can be accurately applied to a desired portion of the vehicle door. The film structure can also comprise a tab, which is mounted to one or more locator projections forming part of the tool. The film structure segment can be secured to 10 the vehicle door (e.g., the door sash or pillar) by use of a pressure sensitive adhesive provided on the back side of the segment. One film structure segment that can be applied according to the present invention is an adhesive-backed paint replacement film, which is used to replace conventional liquid paint. The locator tool assembly can also include a stripper mechanism associated with the locator tool for use in removing one or more tabs 15 held by the one or more locator projections.

In accordance with a first aspect of the present invention, a locator tool is provided which is capable of being positioned on an edge of an outer surface of a vehicle door. The tool functions to properly locate an adhesive-backed film segment to be applied to the vehicle door outer surface. The tool comprises: a main body configured to be mounted on 20 the edge of the outer surface of the vehicle door; holding structure associated with the main body for releasably securing the main body to the outer surface edge; and at least one locator projection associated with the main body and adapted to mount an adhesive-backed film structure including the film segment capable of being adhered to the vehicle door outer surface.

25 In accordance with a second aspect of the present invention, a locator tool assembly is provided comprising a locator tool capable of being mounted to a vehicle door and including at least one locator projection adapted to mount one or more film tabs. Each tab forms a removable part of an adhesive-backed film structure. The tool assembly further comprises a stripper mechanism associated with the locator tool for use in 30 removing the one or more film tabs from the at least one locator projection.

In accordance with a third aspect of the present invention, a method is provided for applying an adhesive-backed film segment to an outer surface of a vehicle door. The

method comprises the step of providing a locator tool assembly comprising a locator tool capable of being mounted to a vehicle door and including at least one locator projection. The locator tool assembly further includes a stripper mechanism associated with the locator tool. The method further comprises the steps of: mounting the locator tool to the vehicle door; mounting an adhesive-backed film structure on the at least one locator projection via a tab forming part of the adhesive-backed film structure; securing an adhesive-backed film segment forming part of the film structure to an outer surface of the vehicle door; and removing the tab of the adhesive-backed film structure from the at least one locator projection via the stripper mechanism.

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Brief Description of Drawings

Fig. 1 is an exploded view of a locator tool assembly constructed in accordance with a first embodiment of the present invention;

15 Fig. 2 is a side view of the locator tool assembly constructed in accordance with the first embodiment of the present invention;

Fig. 3 is a perspective view of the locator tool assembly of Fig. 2, with the stripper mechanism shown in a retracted position relative to a tab illustrated in phantom;

20 Fig. 4 is a perspective view of the locator tool assembly of Fig. 2, with the stripper mechanism shown in an extended position so as to assist in moving the tab illustrated in phantom away from a main body of the locator tool and free of locator pins;

Fig. 5 is a side view of the locator tool assembly of Fig. 2 mounted to a vehicle door corner;

25 Fig. 6 is a side view showing a portion of a vehicle door in cross section with the tool assembly of Fig. 2 mounted to an outer edge of an outer surface of the vehicle door;

Fig. 7 is an exploded view of a film structure prior to the segment being separated from the tab; and

30 Fig. 8 is a side view of a locator tool assembly constructed in accordance with a second embodiment of the present invention mounted to an inner edge of an outer surface of a vehicle door.

Best Modes for Carrying Out the Invention

Illustrated in Figs. 1-6 is a locator tool assembly 10 constructed in accordance with a first embodiment of the present invention for use in applying an adhesive backed film or tape segment 100 to an outer face of an adherend. The adhesive-backed film segment 100 may comprise a paint replacement film, which, in the illustrated embodiment, is applied to an outer surface 202 of a vehicle door 200, see Figs. 5 and 6. In the illustrated embodiment, the vehicle door 200 comprises a sash 204 and a pillar 206. The vehicle door outer surface 202 is defined by the outer surfaces of the sash 204 and the pillar 206.

The film segment 100 is illustrated in phantom in Fig. 5 and in solid line in Fig. 7. In the illustrated embodiment, the film segment 100 defines a portion of an adhesive-backed film structure 102. The film structure 102 further comprises an adhesive-backed film tab 104. A release liner 106 is provided which is releasably mounted to the adhesive side of the film structure 102. The film tab 104 is provided with a pair of openings 104a. Similarly, a first portion 106a of the release liner 106, which portion 106a is releasably secured to the tab 104, includes a pair of openings 106b in-line with the openings 104a. The openings 104a and 106b allow the film structure 102 and corresponding release liner 106 to be mounted to the tool assembly 10, as will be discussed in further detail below.

The release liner 106 further includes a second portion 106c, which is releasably secured to the film segment 100. A perforation line 108 is provided through the film structure 102 so as to permit the film segment 100 to be separated from the tab 104. A perforation line 108a may also be provided in the release liner 106, which perforation line 108a may be formed concurrently with the perforation line 108 in the film structure 102. The release liner 106 may also include a score line 108b, i.e., a cut extending completely through the liner 106, so as to permit the release liner second portion 106c to be removed from the film segment 100.

The film structure 102 may comprise any one of the pressure sensitive adhesive films or tapes disclosed in the following documents: WO 01/28769 A1, entitled "CONFORMABLE MULTILAYER FILMS," published on April 26, 2001; WO 02/064674 A2, entitled "REPLACEMENT FOR PLASTICIZED POLYVINYL CHLORIDE," published on August 22, 2002; U.S. Patent No. 6,524,675 B1 and entitled "ADHESIVE-BACK ARTICLES"; U.S. Patent No. 6,607,831 B2 and entitled "MULTILAYER ARTICLE"; U.S. Patent No. 6,759,110 B1 and entitled "STRUCTURED

RELEASE LINERS WITH IMPROVED ADHESION TO ADHESIVE ARTICLES"; and U.S. Patent Application Publication 2003/0207065 A1 and entitled "ADHESIVES HAVING A MICROREPLICATED TOPOGRAPHY AND METHODS OF MAKING AND USING SAME"; the disclosure of each of these documents is incorporated herein by reference.

Referring again to Figs. 1-6, the locator tool assembly 10 comprises a locator tool 20 and a release or stripper mechanism 50. The locator tool 20 is mounted to an outer edge 202a of the vehicle door outer surface 202. The tool 20 comprises a main body 30 having first and second leg portions 32 and 34 which, in the illustrated embodiment, define an angle Θ of about 100 degrees, see Fig. 5, so as to allow the main body 30 to be mounted to a corner 207 of the vehicle door 200. The angle Θ may vary, e.g., 0 degrees to 180 degrees, so as to allow the main body 30 to be configured to the shape of any vehicle door corner. It is also contemplated that the main body may comprise a single leg having a substantially linear or curved shape. The main body 30 may be formed from a polymeric material such as polyacetal, nylon, linen reinforced bakelite or like materials. It is also contemplated that the main body 30 may be formed from a metal having surfaces painted or coated with a polymeric layer so as not to mark a painted surface of a vehicle door to which the tool 20 is attached.

The main body 30 further comprises first and second opposing flanges 36a, 36b defining a first recess 38a, third and fourth opposing flanges 36c, 36d defining a second recess 38b, and fifth and sixth opposing flanges 36e, 36f defining a third recess 38c, see Figs. 1, 2, 5 and 6. As is apparent from Figs. 5 and 6, the locator tool 20 is mounted so that the outer edge 202a of the vehicle door outer surface 202 is received in the recesses 38a-38c. First, second and third pairs of magnets 40a, 40b and 40c are mounted in corresponding openings in the main body 30 so as to be flush with the openings or slightly recessed in the openings. The magnets 40a-40c preferably do not extend into the recesses 38a-38c so as not to scratch or mark the vehicle door outer edge 202a, see Figs. 5 and 6. The magnets 40a-40c function to releasably secure or hold the locator tool 20 to the vehicle door outer surface 202. It is also contemplated that each recess 38a-38c may be defined by only a single flange instead of two flanges.

A pair of locator pins 42a and 42b (also referred to herein as locator projections) extend through corresponding bores 39a and 39b in the main body 30, see Fig. 1. The

release liner 106. The tab 104 and its corresponding release liner portion 106a may remain on the locator pins 42a, 42b. Because the locator tool 20 may be used to apply a plurality of film segments 100 to multiple vehicle doors, a number of tabs 104 and corresponding release liner portions 106a may build up on the locator pins 42a, 42b. As the tabs 104 build up, their removal from the locator pins 42a, 42b become more and more difficult, especially when the holes 104a, 106a in the tabs 104 and corresponding release liner portions 106a and the locator pins 42a, 42b are designed to fit snuggly together. The stripper mechanism 50, which is associated with the locator tool 20, provides an easy means by which to push or move the tabs 104 and corresponding release liner portions 106a off the locator pins 42a, 42b.

The stripper mechanism 50 comprises first and second guide rods 52a and 52b which are slidably received in bores 39c and 39d in the locator tool main body 30, see Fig. 1. The mechanism 50 further comprises first and second stripper plates 54 and 56 (also referred to herein as stripper elements), which are coupled together via the guide rods 52a, 52b. Bolts, screws or pins 55 are provided for fixedly coupling the plates 54 and 56 to the guide rods 52a, 52b. After being coupled together, the plates 54 and 56 are positioned on the opposing sides 30a and 30b of the main body 30, see Fig. 2.

First and second openings 54a and 54b, respectively, are provided in the first plate 54, and first and second openings 56a and 56b, respectively, are provided in the second plate 56. Locator pin 42a passes through the first openings 54a and 56a in the plates 54 and 56, and locator pin 42b passes through the second openings 54b and 56b in the plates 54 and 56. Hence, the release mechanism 50 may be manually moved relative to the main body 30 and the main body locator pins 42a, 42b.

First and second plate recesses 132 and 134, respectively, are provided in the main body 30 and are shaped to receive the first and second plates 54 and 56, respectively, see Figs. 1 and 2. The first plate 54 is received in the first plate recess 132 when the stripper mechanism 50 is moved to a first position so as to allow a film structure 102 to be positioned adjacent to the main body first side 30a, see Fig. 3. It is noted that the stripper mechanism 50 is free-floating relative to the main body 30 in the illustrated embodiment. Hence, when a tab 104 is pushed onto the locator pins 42a, 42b so as to be adjacent to the main body first side 30a, the stripper mechanism 50 is automatically positioned in its first position such that the first plate 54 is received in the first plate recess 132. When the

stripper mechanism 50 is in its first position, the second plate 56 is spaced away from the second side 30b of the main body 30. The second plate 56 is received in the second plate recess 134 when the stripper mechanism 50 is moved to a second position so as to allow a film structure 102 to be positioned adjacent to the main body second side 30b, see Fig. 2.

5 When the stripper mechanism 50 is in its second position, the first plate 54 is spaced away from the first side 30a of the main body 30.

When one or more tabs 104 positioned on the locator pins 42a, 42b are to be removed, an operator need only manually move the stripper mechanism 50 in a direction toward the tabs 104 so as to move the tabs 104 off the pins 42a, 42b. For example, a 10 single tab 104 is shown in phantom in Fig. 3 positioned on the locator pins 42a, 42b. The tab 104 is also positioned adjacent to main body first side 30a and first stripper plate 54. To remove the tab 104, the stripper mechanism 50 is manually moved in a direction toward the tab 104 such that the first stripper plate 54 is moved away from the main body first side 30a, thereby pushing the tab 104 off the locator pins 42a, 42b, see Fig. 4.

15 The process for applying an adhesive-backed film segment 100 to the outer surface 202 of a vehicle door 200 will now be described. Initially, the locator tool 20 is manually mounted to the outer edge 202a of the vehicle door outer surface 202 such that the outer edge 202a is received in the recesses 38a-38c, see Figs. 5 and 6. Then, an adhesive-backed film structure 102 and corresponding release liner 106 are mounted to the locator pins 42a, 42b, see Fig. 5 where a portion of a film structure 102 is shown in phantom. The second portion 106c of the release liner 106 is separated from the release liner first portion 106a via the score line 108b and removed from the film segment 100. The adhesive side 20 of the film segment 100, which is nearest to the vehicle door 200, is then manually adhered to the door outer surface 202. A squeegee (not shown) comprising a soft plastic block, which may be covered with a padded cloth to reduce scratching of the vehicle door 200, may be used by the operator to assist in applying the film segment 100 to the vehicle door outer surface 202. A hand-held tool (not shown) having one or more rollers for applying the film segment 100 to the vehicle door outer surface 202 may also be provided. It is also contemplated that an operator may wear soft gloves when applying the film segment 100, with or without a squeegee or tool with one or more rollers, to the vehicle door outer surface 202. Next, the locator tool 20 is removed from the vehicle door 200. In the illustrated embodiment, the film segment 100 automatically separates from the tab 104

locator pins 42a and 42b are fixed in position in the main body 30 via locking press-fit pins 44a and 44b or set screws. The locator pins 42a and 42b are spaced apart a distance which is substantially equal to the distance between the openings 104a in the film tab 104 and the openings 106b in the release liner 106. The locator pins 42a, 42b function to mount an adhesive-backed film structure 102 and its corresponding release liner 106.

5 Preferably, the pins 42a, 42b and openings 104a and 106b are sized to fit snuggly one inside the other, respectively. By snuggly mounting the film structure 102 and its release liner 106 onto the pins 42a, 42b, the locator tool 20, which preferably has previously been mounted to the outer edge 202a of the vehicle door outer surface 202, functions to

10 properly position the film structure 102 relative to the vehicle door 200 so that the segment 100 of the film structure 102 may be accurately located and applied to the vehicle door 200. It is also contemplated that a single locator projection may be provided in place of the locator pins 42a and 42b. Such a single projection may have a cross-section that is circular shaped, like either pin 42a or 42b, or a cross-section that is wider than it is high

15 (e.g., as wide as the spaced apart pins 42a and 42b and as high as the diameter of either pin 42) and that is received in a single slot provided in each of tab and release liner, or at least the tab.

Because the locator pins 42a and 42b extend outwardly beyond first and second outer surfaces or sides 30a and 30b of the main body 30, the locator tool 20 may be used

20 to mount a film structure 102 and its corresponding release liner 106 adjacent to either a right-hand or left-hand vehicle door. It is also contemplated that the locator pins 42a, 42b may extend outwardly from only a single side 30a or 30b of the main body 30. In this latter embodiment, the tool 20 may only be used with either a right-hand or a left-hand vehicle door.

25 A portion 30c of the main body 30 near the flanges 36a-36f and on each of the main body sides 30a and 30b is provided with a textured or grooved surface 130, see Fig. 1. The textured surface 130 functions to reduce the amount of adhesion that occurs when a portion of an adhesive side of the adhesive-backed film segment 100 contacts the main body 30 thereby allowing the segment adhesive side portion to be easily removed from the textured surface 130.

30 During the film segment application process, which will be described more explicitly below, the film segment 100 is separated from its corresponding tab 104 and

release liner 106. The tab 104 and its corresponding release liner portion 106a may remain on the locator pins 42a, 42b. Because the locator tool 20 may be used to apply a plurality of film segments 100 to multiple vehicle doors, a number of tabs 104 and corresponding release liner portions 106a may build up on the locator pins 42a, 42b. As 5 the tabs 104 build up, their removal from the locator pins 42a, 42b become more and more difficult, especially when the holes 104a, 106a in the tabs 104 and corresponding release liner portions 106a and the locator pins 42a, 42b are designed to fit snuggly together. The stripper mechanism 50, which is associated with the locator tool 20, provides an easy means by which to push or move the tabs 104 and corresponding release liner portions 10 106a off the locator pins 42a, 42b.

The stripper mechanism 50 comprises first and second guide rods 52a and 52b which are slidably received in bores 39c and 39d in the locator tool main body 30, see Fig. 1. The mechanism 50 further comprises first and second stripper plates 54 and 56 (also referred to herein as stripper elements), which are coupled together via the guide rods 52a, 15 52b. Bolts, screws or pins 55 are provided for fixedly coupling the plates 54 and 56 to the guide rods 52a, 52b. After being coupled together, the plates 54 and 56 are positioned on the opposing sides 30a and 30b of the main body 30, see Fig. 2.

First and second openings 54a and 54b, respectively, are provided in the first plate 54, and first and second openings 56a and 56b, respectively, are provided in the second 20 plate 56. Locator pin 42a passes through the first openings 54a and 56a in the plates 54 and 56, and locator pin 42b passes through the second openings 54b and 56b in the plates 54 and 56. Hence, the release mechanism 50 may be manually moved relative to the main body 30 and the main body locator pins 42a, 42b.

First and second plate recesses 132 and 134, respectively, are provided in the main 25 body 30 and are shaped to receive the first and second plates 54 and 56, respectively, see Figs. 1 and 2. The first plate 54 is received in the first plate recess 132 when the stripper mechanism 50 is moved to a first position so as to allow a film structure 102 to be positioned adjacent to the main body first side 30a, see Fig. 3. It is noted that the stripper mechanism 50 is free-floating relative to the main body 30 in the illustrated embodiment. 30 Hence, when a tab 104 is pushed onto the locator pins 42a, 42b so as to be adjacent to the main body first side 30a, the stripper mechanism 50 is automatically positioned in its first position such that the first plate 54 is received in the first plate recess 132. When the

stripper mechanism 50 is in its first position, the second plate 56 is spaced away from the second side 30b of the main body 30. The second plate 56 is received in the second plate recess 134 when the stripper mechanism 50 is moved to a second position so as to allow a film structure 102 to be positioned adjacent to the main body second side 30b, see Fig. 2.

5 When the stripper mechanism 50 is in its second position, the first plate 54 is spaced away from the first side 30a of the main body 30.

When one or more tabs 104 positioned on the locator pins 42a, 42b are to be removed, an operator need only manually move the stripper mechanism 50 in a direction toward the tabs 104 so as to move the tabs 104 off the pins 42a, 42b. For example, a 10 single tab 104 is shown in phantom in Fig. 3 positioned on the locator pins 42a, 42b. The tab 104 is also positioned adjacent to main body first side 30a and first stripper plate 54. To remove the tab 104, the stripper mechanism 50 is manually moved in a direction toward the tab 104 such that the first stripper plate 54 is moved away from the main body first side 30a, thereby pushing the tab 104 off the locator pins 42a, 42b, see Fig. 4.

15 The process for applying an adhesive-backed film segment 100 to the outer surface 202 of a vehicle door 200 will now be described. Initially, the locator tool 20 is manually mounted to the outer edge 202a of the vehicle door outer surface 202 such that the outer edge 202a is received in the recesses 38a-38c, see Figs. 5 and 6. Then, an adhesive-backed film structure 102 and corresponding release liner 106 are mounted to the locator pins 42a, 42b, see Fig. 5 where a portion of a film structure 102 is shown in phantom. The second portion 106c of the release liner 106 is separated from the release liner first portion 106a via the score line 108b and removed from the film segment 100. The adhesive side 20 of the film segment 100, which is nearest to the vehicle door 200, is then manually adhered to the door outer surface 202. A squeegee (not shown) comprising a soft plastic block, which may be covered with a padded cloth to reduce scratching of the vehicle door 200, may be used by the operator to assist in applying the film segment 100 to the vehicle door outer surface 202. A hand-held tool (not shown) having one or more rollers for applying the film segment 100 to the vehicle door outer surface 202 may also be provided. It is also contemplated that an operator may wear soft gloves when applying the film segment 100, with or without a squeegee or tool with one or more rollers, to the vehicle door outer surface 202. Next, the locator tool 20 is removed from the vehicle door 200. In the illustrated embodiment, the film segment 100 automatically separates from the tab 104

via the perforation line 108 when the tool 20 is removed from the door 200. Alternatively, a recess (not shown) may be provided in the main body 30, which recess is in-line with the perforation line 108. The recess allows an operator to easily apply pressure to the film structure 102 along the perforation line 108, such as by using a pointed edge of a squeegee, so as to separate the film segment 100 from the tab 104.

After the tool 20 is removed, any remaining portions of the film segment 100 which have not yet been adhered to the door outer surface 202 are pressed against the surface 202, including the wrapping of outer edges of the film segment 100 about outer edges of the vehicle door outer surface 202, to complete the application process. The tab 104 and its corresponding release liner portion 106a may be removed from the locator pins 42a, 42b just after the corresponding film segment 100 has been applied to the vehicle door 200 using the stripper mechanism 50. Alternatively, a plurality of tabs 104 and corresponding release liner portions 106a may be allowed to build up on the locator pins 42a, 42b and later removed simultaneously via the stripper mechanism 50.

A locator tool 400, constructed in accordance with a second embodiment of the present invention for use in applying an adhesive-backed film or tape segment 300 to an outer face of an adherend, such as a vehicle door 500, is illustrated in Fig. 8. The adhesive-backed film segment 300 may comprise a paint replacement film, which, in the illustrated embodiment, is applied to an outer surface 502 of the vehicle door 500. In the illustrated embodiment, the vehicle door 500 comprises a sash 504 and a pillar 506. The outer surface 502 is defined by the outer surfaces of the sash 504 and the pillar 506.

A portion of the film segment 300 is illustrated in phantom in Fig. 8. In the illustrated embodiment, the film segment 300 defines a portion of an adhesive-backed film structure 302. The film structure 302 further comprises an adhesive-backed film tab 304. A release liner (not shown) is provided which is releasably mounted to the adhesive side of the film structure 302. The film tab 304 is provided with a pair of openings 304a. Similarly, a first portion of the release liner, which portion is releasably secured to the tab 304, includes a pair of openings. The openings in the tab and the release liner first portion allow the film structure 302 and corresponding release liner to be mounted to the tool 400.

The release liner further includes a second portion, which is releasably secured to the film segment 300. A perforation line 308 is provided through the film structure 302 so as to permit the film segment 300 to be separated from the tab 304. A score line (not

shown) may be provided in the release liner so as to permit the release liner second portion to be separated from the release liner first portion.

The film structure 302 may comprise any one of the pressure sensitive adhesive films or tapes used to form the film structure 102, noted above.

In the embodiment illustrated in Fig. 8, the locator tool 400 is mounted to an inner edge 502a of the vehicle door outer surface 502. The tool 400 comprises a main body 430 having first and second leg portions 432 and 434 which, in the illustrated embodiment, are substantially parallel to one another. The main body 430 may be formed from any one of the materials used to form the main body 30, noted above.

The main body 430 further comprises a first set of flanges 436a for defining a first recess between them, a second set of flanges 436b for defining a recess between them, and a third set of flanges 436c for defining a recess between them. The flanges 436a-436c are similar to the opposing flanges 36a-36f set out above. As is apparent from Fig. 8, the locator tool 400 is mounted so that the inner edge 502a of the vehicle door outer surface 502 is received in the recesses defined by the flanges 436a-436c. First, second and third pairs of magnets (not shown) are mounted in corresponding openings in the main body 430 so as to be flush with the openings or slightly recessed in the openings. The magnets preferably do not extend into the recesses defined by the flanges 436a-436c so as not to scratch or mark the vehicle door inner edge 502a. The magnets function to releasably secure or hold the locator tool 400 to the vehicle door inner surface 502.

A pair of locator pins 442a and 442b (also referred to herein as locator projections) extend through corresponding bores in the main body 430. The locator pins 442a and 442b are fixed in position in the main body 430 via locking pins (not shown), which pins are similar to pins 44a and 44b described above. The locator pins 442a, 442b function to mount an adhesive-backed film structure 302 and its corresponding release liner. By mounting the film structure 302 and its release liner to the pins 442a, 442b, the locator tool 400, which preferably has previously been mounted to the inner edge 502a of the vehicle door outer surface 502, functions to properly position the film structure 302 relative to the vehicle door 500 so that the segment 300 of the film structure 302 may be accurately located and applied to the vehicle door 500.

While not shown in the Fig. 8, portions 430c of the main body 430 near the flanges 436a-436c may be provided with a textured or grooved surface. The textured surface

functions to reduce the amount of adhesion that occurs when a portion of an adhesive side of the adhesive-backed film segment 300 contacts the main body 430 thereby allowing the segment adhesive side portion to be easily removed from the textured surface.

While not shown in Fig. 8, a release or stripper mechanism similar to the release mechanism 50 described above may be provided to assist in removing one or more tabs 304 located on the pins 442a, 442b.

The process for applying an adhesive-backed film segment 300 to the outer surface 502 of a vehicle door 500 will now be described. Initially, the locator tool 400 is manually mounted to the inner edge 502a of the vehicle door outer surface 502 such that the inner edge 502a is received in the recesses defined between the flanges 436a-436c. Then, an adhesive-backed film structure 302 and corresponding release liner are mounted to the locator pins 442a, 442b. The second portion of the release liner corresponding to the film segment 300 is removed from the film segment 300. The adhesive side of the film segment 300, which is nearest to the vehicle door 500, is then manually adhered to the door 500. A squeegee (not shown) may be used by the operator to assist in applying the film segment 300 to the vehicle door 500. The tool 400 is then removed from the door 500. The film segment 300 separates from the tab 304 via the perforation line 308 when the tool 400 is removed from the door 500. The portions of the film segment 300 previously positioned over the main body portions 430c as well as any other portions not yet secured to the door outer surface 502 are then manually adhered to the outer surface 502 so as to complete the application process. The tab 304 may be removed via a release mechanism, if provided, or manually if such a mechanism is not provided and discarded. If a release mechanism is not provided, the tab 304 may be enlarged so as to extend beyond the outer edges of the main body 430 to thereby allow an operator to easily grip the tab 304 for removal from the locator pins 442a, 442b.

While particular embodiments of the present invention have been illustrated and described, it would be obvious to those skilled in the art that various other changes and modifications can be made without departing from the spirit and scope of the invention. It is therefore intended to cover in the appended claims all such changes and modifications that are within the scope of this invention. For example, it is contemplated that the tools of the present invention could be used to apply films to articles other than vehicle sashes such as appliances, tools, etc.